

Analysis of Rock Painting Creation Under Nonlinear Thinking

Dan Chen^{1,*}

¹Xiamen Academy of Arts and Design, Fuzhou University, Xiamen, Fujian, China

*Corresponding author. Email: langxingdan@163.com

ABSTRACT

This paper analyzes and demonstrates the artistic appeal of contemporary rock painting which integrates nonlinear thinking. First, the connotation and denotation of nonlinear thinking are comprehensively explained. Subsequently, the integrating point of nonlinear thinking and rock art is discussed. Finally, the nonlinear characteristics of rock painting creation are analyzed in modeling and material, revealing the application and expression of nonlinear thinking in rock painting creation, emphasizing the integration of nonlinear thinking, and bringing a new visual experience to rock painting creation.

Keywords: nonlinear thinking, rock painting creation, uncertainty

I. INTRODUCTION

Nonlinear thinking, a trend of thought in postmodern philosophy, has recently become a hot topic and is widely employed in various fields of art. The development of the times leads to certain nonlinear features in rock paintings creation. The nonlinear thinking enriches and enhances the visual expression language of rock painting creation with a new vision.

II. THE CONNOTATION AND DENOTATION OF NONLINEAR THINKING

The first is a brief review of the origin of "nonlinearity". Nonlinearity is one of the basic phenomena in nature. Since the mid-20th century, study on nonlinear issues has become a frontier topic in the field of natural and social sciences, giving birth to a heterogeneous academic group covering theory of dissipative structure, synergetics, catastrophe theory, hypercycle theory, chaology.¹ The process of criticizing and rethinking on the rationalist cognition and thinking mode of traditional science begets a new concept — nonlinear science, which breaks the linear thinking and its shackles on human beings. The nonlinear thinking has become the characteristic of scientific thinking. The rise and vigorous development of nonlinear thinking not only allows human a clear understanding of the

nature of the world, but also greatly changes the scientific thinking mode of contemporary people.

The application of nonlinear thinking in art first appeared in the field of architectural art. Architecture, like other man-made objects, are swayed by nonlinear scientific theories, throwing off the shackles of regular and standard geometry and embarking on the path of nonlinear development. The nonlinear design of architecture presents many unique and creative works, such as Bird's Nest designed by Herzog and De Meuron, Absolute Towers by Chinese architect Ma Yansong, etc. It can be seen from such buildings that the biggest characteristic of nonlinearity is uncertainty. To be more precise, it is an attitude of artists, an expression of ideas against tradition, which breaks the shackles of linear science on human thinking and releases human thinking and imagination.

A rock painting is actually an "architecture" with caps on the length, width and height. The traditional "certainty" and "mindset" lead to the usually single process of rock painting creation: inheritance of traditional painting mode. Such formula of "homogeneity" and "linearization" results in many monotonous works unable to convey the material beauty and color beauty of rock painting. "The value of art lies in breaking traditions."² Nonlinear thinking allows a new interpretation based on the feature of mineral pigments in rock painting and the diversified expression techniques of metal foils, rather than fixed and mechanized imitation of traditional painting patterns. The emergence of some novel textures, the

*Fund: The paper is sponsored by the Social and Science research Support Project of Fuzhou University in 2015: Research on Contemporary Rock Painting with Nonlinear Concept in Thinking Creation (No.: 15SKF52).

¹ Tian Baoguo, Gu Ke et al. "From Linear to Nonlinear: The Course of Scientific Development" [J]. Journal of System Dialectics, 2001, Issue 7, p. 62.

² "The value of art lies in breaking traditions." belongs to the chapter Ueno Tairo of "Masters' Heavy-color Painting Technique".

application of composite materials, and the different attempts in carriers are all uncertain and unpredictable. The different expression techniques full of variables bring surprises to the creator. As The Japanese painter Taki Satsuyuki said, "...In order to conduct real creative activity, we have to get rid of the 'rules' and fetters that we impose on ourselves."

III. THE INTEGRATION OF NONLINEAR THINKING IN THE CREATION OF ROCK PAINTING

The integration of nonlinear thinking will endow infinite opportunities for the creation of rock painting. The beauty of rock color itself, the texture beauty of the color painted on the surface of paper, cloth, wood products and metal, as well as the beauty of the installation art of the color mixed with other materials from plane to three-dimensional will bring a brand new visual feast.

A. Nonlinear characteristics in modeling

1) *Line*: Line occupies an important position in traditional Chinese realistic painting. Such dominant role is manifested in both fine traditional Chinese realistic painting and freehand brush work. In the Tang Dynasty, Zhang Yanyuan pointed out in the *Famous Paintings of Past Dynasties* that "Chinese painting is based on lines from beginning to end, without which it cannot be called painting". However, "rock painting does not deny the beauty of lines, but at the same time is not limited to such beauty."³

Contemporary rock paintings no longer blindly follow the rules of traditional lines. The lines here vary in form, and can be profound or arbitrary; the edges of object drawn, or a long, narrow entity. It can be the result of multiple overlapping colors, the accumulation of mineral rock materials, the texture made with metal foil, or, more likely, the virtual space between two color blocks. For example, in *Spring Waves and Autumn Waves* by famous Japanese painter Kayama Matazo (See "Fig. 1"), the lines showing the surging waves are pasted with silver foil. Another example is *Overhead Road in Shanghai* by Zhuo Min (See "Fig. 2"), in which the line modeling of scaffolding is made by embedding threads. Such novel methods of adopting "line" are pioneering application.



Fig. 1. *Spring Waves and Autumn Waves* by Kayama Matazo (source: *Art of Rock Painting* by Hu Mingzhe).



Fig. 2. *Overhead Road in Shanghai* by Zhuo Min (part) (source: *Modern Heavy-color Painting Technique* by Zhang Xiaolu).

2) *Plane*: In addition to line, there is another indispensable part among elements of picture: "surface". The surface intentionally weakens the line, and the color block then becomes the most vivid language factor in creating visual effect. Contrary to classic ink painting, whose background emphasizes the profound relationship between virtual and real, rock painting no longer blindly pursue the vast artistic space, real or illusory, displayed by empty space. The emphasis on the flatness of rock paintings leads to the contrast of all the figures in the picture. The construction of background begins to change from virtual space to physical space. The "plane" begins to assume the responsibility of organizing picture, color blocks become the frame of the picture modeling, and the relationship of color and texture between the blocks directly determine the success or failure of the picture. (See "Fig. 3") As Hu Mingzhe said, "Gradually, another kind of vividness and richness unfolds before our eyes. The concept of carefully painting one scene and one object gives way to that of carefully painting one form, one color, one virtual piece, one real piece, and one feeling."⁴ In this way, the plane can be completed no

³ Hu Mingzhe. *Art of Rock Painting* [M]. Heilongjiang: Heilongjiang Fine Arts Publishing House, 2001: 55.

⁴ Hu Mingzhe. *Rock Painting: Talking from Xiong Wenyun's Painting Exhibition* [J]. *Art Observation*, 1997(3): 36

longer only through painting, collage, imprint, foil and other new techniques also deserve places. Such new techniques enrich the artistic expression of rock painting.



Fig. 3. *Autumn Scene* by Hu Mingzhe (source: *Art of Rock Painting* by Hu Mingzhe)

B. Nonlinear characteristics in material

1) *Pigment*: The pigments used in contemporary rock paintings were developed based on ancient mineral colors. All mineral pigments are excellent painting materials with natural beauty and gemstone luster, showing more diversified painting concepts and visual language on the picture. Natural mineral pigments can be fried⁵ to darken the hue (See "Fig. 4"). The biggest difference between modern and traditional pigments is that the original pattern of one stone with one or three colors are developed into richer color gradation of one stone with fourteen colors. The color after such treatment maintained original bright color, different in grains, which brings rich texture changes to the processing of picture. Due to the scarcity and relatively high cost of raw stones with natural mineral colors, a glaze for making Cloisonne came into being, also known as "high-temperature crystalline pigment". Similar to Japan's Sin-am, it expands and makes up for the lack of natural mineral color in variety. China's

⁵ The aim of frying is to achieve the color effect of calm and low purity. Natural mineral pigments with bright colors, such as azurite and malachite, are put in a saucepan and heated to change color to meet the actual needs of painting.

traditional rock painting subsequently enjoys a richer color system and more colorful and brilliant colors.



Fig. 4. A change in color during firing on an electric furnace (source: *Art of Rock Painting* by Hu Mingzhe).

In addition, the creation of rock painting is no longer limited to mineral color, Sin-am, metal color and other materials, water pink, water color, propylene color are also employed. Painting with mineral colors, shiny metal materials and composite materials of different grains undoubtedly poses considerable challenges and uncertainties, which is exactly the charm of rock painting.

2) *Carrier*: Traditional Chinese rock paintings are usually painted on paper (mainly hemp paper, Chinese art paper and vellum) or silk cloth, or directly on walls, such as cave paintings and temple murals. The diversified development of modern science and art forms leads to the emergence of various forms of artistic expression with rock painting as the media. The thickness of modern rock painting, as well as the pursuit of texture and material aesthetic, determines that the carrier must be solid, wear-resistant, etc. Based on such characteristics, in addition to paper and silk, board, hemp, cloth, kapok, leather and other materials can also be employed for rock painting. The use of these materials also makes the effect even more unpredictable. For example, the Japanese painter Keizaburo Okamura used wooden boards, which were deliberately blackened with an electric iron and then painted on.

3) *Metal materials*: Metal materials mainly include foil and metalliferous mud. Foil is metal material frequently adopted in China and other Oriental countries since ancient times. At present, it mainly covers gold foil, red gold foil, green gold foil, aqua gold foil, platinum foil, aluminum foil, silver foil and copper foil. Among them, some are stable with fixed color (gold foil), others are capricious in color (silver foil and copper foil), and these are unparalleled and irreplaceable.

Silver and copper foil undergo wonderful changes in a very short time after artificial heating and vulcanization. "Fig. 5" shows the natural color changes of silver foil and copper foil at different temperatures after vulcanization. The uncontrollable nature of the foil adds infinite possibilities and unique aesthetic vision to the painting.

Metalliferous mud is the pulverized material after crushing gold foil, similar in type and performance to metal foil.

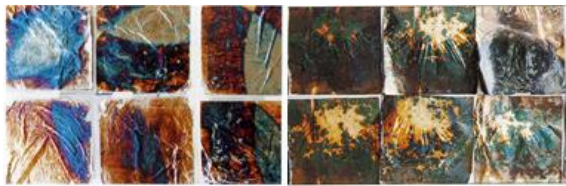


Fig. 5. Color change of silver and copper foil vulcanized at different temperatures (source: *Handbook of Mineral Color* by Wang Xiongfei and Yu Lvkuai).

4) *Expansion and use of other materials*: "The application of any material must respect its nature. What needs to be changed is not the character of the material, but the thinking of the creator." ⁶ Contemporary rock paintings will expand towards the direction of diversification, and the use of composite materials is the direction it wants to interpret. For example, there are many other materials used in painting: brushes, oil brushes, scrapers, roller, airbrush, artists' oil colour, propylene color, water color, water pink, sand, and so on; even materials endowed by nature as "red soil", "loess", etc. The concept of "heterogeneous isomorphism" proposed by Hu Mingzhe is to put rock color, pulp, fiber, metal foil (net) in the same picture. Artists should experiment with whatever material is useful to the picture. Many works of the famous rock painter Hu Wei skillfully apply different materials and integrate them with the painting language of rock color, breaking through the simple two-dimensional limitations, achieving impressive artistic effects, and giving people a new aesthetic experience.

IV. REFLECTION ON NONLINEAR THINKING IN THE CREATION OF ROCK PAINTING

The studio in Gulangyu Island enables the author a "paradise" for experiment. The use of rock materials brings infinite pleasure. The nature, unpredictability, uncontrollability and unoperability of rock paintings are exactly what is needed in practice, which also makes painting creation interesting thing. The practice of deep communication with rock materials, whether successful or not, allows the author to feel the new painting concept and painting aesthetic inspired by new materials, almost every step of painting brings new feelings and experience.

The process of such creation reminds the author that there exists no right or wrong, correct or mistake in

painting, not to mention the fear of chaos. The so-called "wrong" just fails to conform to the original idea, but is the original idea really wonderful? The "mistake" is simply not "connected" to other. Maybe it's the latter that need to be adjusted? The "chaos" only shows that all elements have no priority, no order... But without such early chaos, the outcome is often rigid, much less inspiring. A breakthrough in original design is often a breakthrough in old experience and ideas. Therefore, creators should pursue the concept of "wrong" rather than "right" in creation. Ideas undefined, unintentional and different from the usual should be promoted. Only in this way can the work be unique and a masterpiece. Perhaps the best outcome is to allow the accidental to collide with the original, improvising a "in between" state. These are just the feelings of the author when creating *The Vicissitudes of Life: Normal People*. (See "Fig. 6")



Fig. 6. *The Vicissitudes of Life: Normal People* (source: the author).

In general, the traditional way is to sketch after the idea of creation becomes clear. Today, the author takes "abstract characters" as the formal language and "materials" as the key words in the language elements, so the creation process becomes dynamic and uncertain. Especially after the author piled up the picture at random, the process and result became unpredictable, and the initial sketch had to be abandoned. The lack of strict presets makes the author pay more attention to the slight changes in the process and communicate more attentively with various materials and languages on the spot, so that the work appears spontaneously in the production process. In the process of painting, the "future" is completely unknown, and new feelings are gained in the experience, thus the work "appearing naturally", which is the joy of creation.

V. CONCLUSION

The creation process of contemporary rock painting is often dynamic and uncertain, so effects cannot be clear at a glance or formed at one time, often resulting in unexpected confusion. It becomes very important to

⁶ Hu Mingzhe. *Oriental Rock Painting Workshop* [M]. Beijing: Beijing Art Photography Publishing House.

adjust the relationship of the picture and consciously find the visual effect suitable for the creator's spiritual needs in the picture. The most urgent need for artists is to have a "face to face" dialogue with their work. Rock painting is not only the most traditional, but also the most modern art form. It integrates non-linear thinking, expands materials and concepts, breaks the old framework, and creates new visual feeling and visual aesthetic space.

References

- [1] (Germany) Klaus Mainzer. Translated by Zeng Guoping. Thinking in Complexity: The Computational Dynamics of Matter, Mind, and Mankind [M]. Beijing: Central Compilation & Translation Press, 2000.
- [2] Dong Gaowei. Application of Complexity Thinking in Postmodernist Philosophy [J]. Theory Horizon, 2008(1). (in Chinese)
- [3] Chen Tong, Yang Xiaoyan. Conversation with Experimental Artists [M]. Changsha: Hunan Fine Arts Publishing House. 1993. (in Chinese)
- [4] Zhang Xiaolu. Modern Heavy-color Painting Technique [M]. Beijing: Beijing Arts and Crafts Press, 2003. (in Chinese)
- [5] Wang Xiongfei, Yu Lykui. Handbook of Mineral Color [M]. Beijing: People's Fine Arts Publishing House. 2005. (in Chinese)
- [6] Hu Mingzhe. Art of Rock Painting [M]. Heilongjiang: Heilongjiang Fine Arts Publishing House, 2001. (in Chinese)